



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

May 4, 1982

Dr. Therese A. Markow
Associate Professor of Research
Department of Zoology
Arizona State University
Tempe, Arizona 85287

Dear Dr. Markow:

Thank you for your very kind letter of April 27. It was a pleasure to have you and the other panel members with us for a week, but, more importantly, your review and recommendations will be very helpful to our research program. You may be assured that we will seriously consider every item in your report and will implement as many of the recommendations as we can within the next few months.

As you know, we lost several researchers during 1980 and 1981 and we are now in the process of strengthening our professional staff (Fargo included) as rapidly as possible. When our new people and their support are in place I am confident that we will quickly begin to make important contributions in the field of screwworm genetics and especially in the area of mating behavior and reproductive isolation. It would be advantageous to us if we could call on you and the other panel members from time to time in the future for additional assessments of our research plans and findings.

Sincerely,

O. H. GRAHAM
Location/Project Leader

cc: L. E. LaChance, RL, Fargo
R. A. Bram, SS, Beltsville
R. A. Hoffman, AAD, College Station
C. J. Whitten, Res. Ent., Fargo

RECEIVED APR 30 1982

ARIZONA STATE
UNIVERSITY

TEMPE, ARIZONA 85287

DEPARTMENT OF ZOOLOGY

April 27, 1982

Dr. O.H. Graham
Screwworm Research Facility
United States Dept. of Agriculture
P.O. Box 986
Mission, Texas 78572

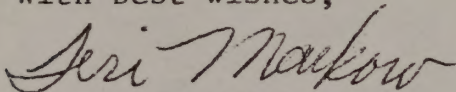
Dear Dr. Graham:

I want to thank you and your entire staff for the help, cooperation, and hospitality you extended to my fellow panel members and me earlier this month during our visit to your facility.

For me the visit was highly informative and stimulating. With the very competent and enthusiastic personnel associated with the screwworm project, it is certain to enjoy continued success.

I look forward to future opportunities to see all of you and to receive news of your work.

With best wishes,



Therese A. Markow
Associate Professor of Research

TAM:nm



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Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

May 5, 1982

SUBJECT: Strain Evaluation Activities by Methods Development

TO: R. A. Bram, Staff Scientist
Insects Affecting Man & Animals
USDA, ARS, National Program Staff
Rm. 325, Bldg. 005
ARC-West
Beltsville, MD 20705

When Drs. Moises Vargas and Chris Hofmann were here last week they gave me a copy of their plan for carrying out future strain evaluation activities; a copy of an English translation is enclosed for your information.

Although it is rather elaborate and implementation will require an augmentation of current Methods' capabilities, the plan appears to be landable. Certainly, program officials need to have as much information about a candidate strain as can be gathered in a reasonable period of time before they place a new strain in mass production. Evaluation should however, be completed rapidly so that colonization of candidate strains in small numbers is not unduly prolonged.

We in ARS will want to complement Methods' activities by making new strains available as needed and by carrying out appropriate research on screwworm genetics, behavior and physiology. After we have time to study the final report of the Expert Committee and prioritize their recommendations we will be able to make a more detailed research plan.

O. H. GRAHAM
Location/Project Leader

Enclosures: 2

cc: J. R. Johnston, AD, College Station
C. J. Whitten, Res. Ent., Fargo
H. E. Brown, RL, Weslaco
H. C. Hofmann, Ent. Adv., Mexico City

Mexico-American Commission for Screwworm Eradication

April 19, 1982

Agreements Reached During a Meeting Called to Establish a Protocol for the Evaluation of Screwworm Strains Which Will Be Used for Mass Production at Tuxtla.

1.0. Criteria for Selection

- 1.1. A new strain will be used only if it is equal to or better than the strain then in production.
- 1.2. A strain inferior to the one then in production will never be accepted.

2.0. Methodology

2.1. Laboratory Evaluation.

- 2.1.1. Records of larval weights.
- 2.1.2. Records of oviposition by groups of flies.
- 2.1.3. Fertility of eggs.
- 2.1.4. Rate of larval development.
- 2.1.5. Electrophoresis (isozyme determinations) (ARS).
- 2.1.6. Longevity.
- 2.1.7. Sexual aggressiveness and its duration.
- 2.1.8. Stress tests.

2.1.8.1. Heat Stress

- 2.1.8.1.1. Ten flies held at 40°C for 12 hours.
- 2.1.8.1.2. Large box with 1600 flies held 48 hrs. and observations made each 6 hrs.

2.1.8.2. Cold Stress

- 2.1.8.2.1. Pupae at 5°C for 72 hrs.

2.1.8.3. CO₂ Stress

- 2.1.8.3.1. Ten flies in a sealed glass container; observations made each 4 hrs.
- 2.1.8.3.2. Large box with 1600 flies in a sealed container (bell jar); observations made each 12 hrs.

2.1.9. Physiological age (ovarian development) vs. chronological age.

- 2.1.10. Sterility Test
 - Sterile X Fertile
 - Sterile X Sterile

2.1.11. Routine Quality Control Test

2.2 Field Evaluation

2.2.1. Assumption

A new strain will be accepted if 60% sterility is obtained.

2.2.2. Test sites.

- 2.2.2.1. An endemic area on the Pacific coast.
- 2.2.2.2. An endemic area on the Gulf coast.
- 2.2.2.3. An endemic area in the state of Chiapas.
- 2.2.2.4. The test areas should be 40 X 40 miles in size.

2.2.3. Sterile insect releases.

- 2.2.3.1. Release should continue for 6 to 8 weeks.
- 2.2.3.2. The release rate will be 1,600/mile²; the requirement will be 2,560,000 flies per week.

2.2.4. Parameters which will be estimated. (In priority order)

2.2.4.1. Sterility levels.

- 2.2.4.1.1. Ten sheep pens; 2 sheep per pen, total 20.
- 2.2.4.1.2. Three animals other than sheep (Species A).
- 2.2.4.1.3. Three animals other than sheep and Species A.

2.2.4.2. Ratio of sterile to fertile flies.

- 2.2.4.2.1. Twenty WOT traps.
- 2.2.4.2.2. Two Bishop traps, liver-baited.
Other baits?

2.2.4.3. Flight capability.

- 2.2.4.3.1. Conducted in Chiapas.
- 2.2.4.3.2. For each release 100,00 marked flies will be used; three releases will be made at 10 day intervals thus giving 40 days of (fly) activity.

2.2.4.4. Larval sample collection.

- 2.2.4.4.1. A field inspector will intensely search for infestations in the test area for a total of 12 weeks, beginning 4 weeks before fly release begins and possibly continuing 4 weeks after the last fly release.

2.2.5. Administrative aspects.

2.2.5.1. Personnel

2.2.5.1.1. Production of the (new) strain.

- 2.2.5.1.1.1. A total of 65 employees will be required for 5 months, of which 23 are available and 42 will be new-hires (which could be contract or temporary laborers). The cost would be MN \$642,600 per month (MN \$510 daily rate) or MN \$3,560,000 for 5 months.

In addition it would be necessary to pay overtime or in some other way compensate for additional hours worked by 10 people for 5 months. The cost would be MN \$26,250 per month or a total of MN \$131,250 for the 5 months' test.

2.2.5.1.2. Field studies

- 2.2.5.1.2.1. Four biotechnicians at all times who would be rotated each 3 weeks.
- 2.2.5.1.2.2. A biotechnician supervisor who would remain (in the area) for the entire test.

2.2.5.2. Equipment and Supplies

2.2.5.2.1. Laboratory tests (in Methods at Tuxtla).

Work orders submitted by Methods Development (for repairs and modifications to its laboratories) need to be given priority.

- 2.2.5.2.2. The contractor Cia. I C I, will have to complete modifications of the laboratories by June 22.

2.2.5.2.3. Field tests

3 pickup trucks
1 stereoscopic microscope with lenses.
Ordinary laboratory and field supplies.

Participants in the meeting:

James E. Novy, DVM
Sergio Martinez Guzman, DVM
Chemist Raquel Courtois
Biologist René Garcia Rodriquez
Mr. William Sudlow
Dr. H. C. Hofmann
Moises Vargas Teran, DVM



COMISION MEXICO-AMERICANA PARA LA ERRADICACION DEL GUSANO BARRENADOR

LA ENERGIA ATOMICA AL SERVICIO DEL GANADERO

ABRIL 19, 1982

ACUERDOS TOMADOS DURANTE LA REUNION SOBRE EL ESTABLECIMIENTO DEL PROTOCOLO PARA EVALUAR LAS VARIEDADES DE MOSCAS DEL G.B. G. QUE SE PRODUCIRAN EN LA PLANTA DE TUXTLA.

1.0. CRITERIO DE SELECCION

- 1.1. LA NUEVA VARIEDAD SOLO SERA EMPLEADA SI ES DE UNA CALIDAD IGUAL O MEJOR QUE LA QUE ESTE PRODUCIENDO LA PLANTA.
- 1.2. NUNCA SE SELECCIONARA UNA VARIEDAD DE CALIDAD INFERIOR A LA QUE SE PRODUCE.

2.0. METODOLOGIA

2.1. EVALUACION EN LABORATORIO

- 2.1.1. REGISTRO DEL PESO LARVARIO.
- 2.1.2. REGISTRO DE LA CANTIDAD DE HUEVECILLOS OVIPOSITADOS POR GRUPOS DE MOSCAS.
- 2.1.3. EXAMEN DE LA FERTILIDAD DE LAS MASAS DE HUEVECILLOS.
- 2.1.4. DETERMINACION DE LA DINAMICA DE DESARROLLO LARVARIO.
- 2.1.5. DETERMINACIONES ELECTROFORETICAS (A.R.S.).
- 2.1.6. DETERMINACION DE LA LONGEVIDAD
- 2.1.7. DETERMINACION DE LA AGRESIVIDAD SEXUAL Y SU DURACION.
- 2.1.8. ESTRESS
 - 2.1.8.1. ESTRESS AL CALOR
 - 2.1.8.1.1. 10 MOSCAS A 40°C DURANTE 12 HRS.

...

2.1.8.1.2. CAJA DE DISPERSION CON 1600 MOSCAS/48 HRS. / OBSERVACIONES --- C/SEIS HORAS.

2.1.8.2. ESTRESS AL FRIO

2.1.8.2.1. PUPA A 5°C / 72 HRS.

2.1.8.3. ESTRESS AL BIOXIDO DE CARBONO

2.1.8.3.1. 10 MOSCAS EN UN RECIPIENTE DE CRISTAL SELLADO. OBSERVACIONES C/CUATRO HORAS.

2.1.8.3.2. CAJA DE DISPERSION 1600 MOSCAS EN RECIPIENTE HERMETICO. OBSERVACIONES C/DOCE HORAS.

2.1.9. DETERMINACION DE LA EDAD FISIOLÓGICA, ATRAVES DEL DESARROLLO. observaciones

2.1.10. EXAMEN DE LA ESTERILIDAD.

ESTERILES - FERTILES
ESTERILES - ESTERILES

2.1.11. PRUEBAS RUTINARIAS DE CONTROL DE CALIDAD.

2.2. EVALUACION DE CAMPO

2.2.1. HIPOTESIS

LA NUEVA VARIEDAD SE CONSIDERARA ACEPTABLE SI SE OBTIENE EL 60% DE ESTERILIDAD.

2.2.2. SITIOS DE PRUEBA.

2.2.2.1. ALGUNA AREA ENZOOTICA EN LA COSTA DEL PACIFICO.

2.2.2.2. ALGUNA AREA ENZOOTICA EN LA COSTA DEL GOLFO.

2.2.2.3. ALGUNA AREA ENZOOTICA EN EL ESTADO DE CHIAPAS.

2.2.2.4. LOS SITIOS DEBERAN TENER UNA SUPERFICIE DE 40 MILLAS X 40 MILLAS.

2.2.3. DISPERSION DE INSECTOS ESTERILES

2.2.3.1. LA DISPERSION TENDRA UNA DURACION DE 6 A 8 SEMANAS.

2.2.3.2. LA DOSIS DE MOSCA QUE SE EMPLEARA POR MILLA CUADRADA SERA DE 1600 A LA SEMANA, LO QUE - DA UNA NECESIDAD DE 2,560,000 MOSCAS POR SE MANA.

2.2.4. PARAMETROS QUE SE ESTIMARAN.

SE DESCRIBEN EN ORDEN PRIORITARIO.

2.2.4.1. NIVELES DE ESTERILIDAD

2.2.4.1.1. 10 CORRALES CON BORREGOS (2 ANI MALES POR CORRAL)(20TOTAL).

2.2.4.1.2. 3 ANIMALES DE UNA ESPECIE "A" DI FERENTE A LA OVINA.

2.2.4.1.3. 3 ANIMALES DE UNA ESPECIE DIFE RENTE A LA OVINA Y A LA ESPECIE "A".

2.2.4.2. PROPORCION DE ADULTOS ESTERILES Y FERTILES

2.2.4.2.1. 20 TRAMPAS ORIENTADAS POR EL VIENTO (T.O.V.)

2.2.4.2.2. 2 TRAMPAS TIPO BISHOP, CEBADAS - CON HIDAGO. CEBADAS CON E ?

2.2.4.3. ESTABLECIMIENTO DEL RANGO DE VUELO.

2.2.4.3.1. SE REALIZAN EN EL ESTADO DE CHIA PAS.

2.2.4.3.2. SE UTILIZARAN 100,000 MOSCAS MAR CADAS POR LIBERACION, REALIZANDO SE 3 LIBERACIONES CON INTERVALO DE 10 DIAS LO QUE NOS DARIA 40 - DIAS DE ACTIVIDAD.

2.2.4.4. MUESTREO DE LARVAS.

2.2.4.4.1. UN INSPECTOR DE CAMPO REALIZARA TRABAJOS INTENSIVOS DE COLECCION DE LARVAS EN EL AREA DE PRUEBA, DURANTE 12 SEMANAS, INICIANDO 4 SEMANAS ATRAS DE QUE DE PRINCIPIO LA PRUEBA, CON LA POSIBILIDAD DE CONTINUAR 4 SEMANAS MAS, DESPUES DEL ULTIMO TRATAMIENTO.

ANTES

2.2.5. ASPECTOS ADMINISTRATIVOS

2.2.5.1. PERSONAL

2.2.5.1.1. PRODUCCION DE LA VARIEDAD

2.2.5.1.1.1. SE REQUIEREN 65 EMPLEADOS DURANTE CINCO MESES, ACTUALMENTE SE CUENTA CON 23 POR LO QUE FALTARIAN 42 NUEVOS EMPLEADOS, QUE PODRIAN SER POSTUREROS, LO QUE DARIA UN COSTO DE \$642,600.00 POR MES (\$510.00 DIARIOS) Y UN TOTAL DE 3,560,000.00 POR CINCO MESES.

ADEMAS SE REQUIRIRIA PAGAR UNA HORAS EXTRAS O UNA COM-PENSACION SIMILAR A 10 PER-SONAS DURANTE CINCO MESES, QUE REPRESENTA UN GASTO DE \$26,250.00 POR MES Y UN TO-TAL DE \$131,250.00 DURANTE CINCO MESES.

2.2.5.1.2. ESTUDIOS DE CAMPO

2.2.5.1.2.1. CUATRO BIOTECNICOS DURANTE UN MES, QUE SE REMPLAZARAN POR OTROS CUATRO A LA TER-CERA SEMANA, POR OTROS CUATRO.

2.2.5.1.2.2. UN BIOTECNICO SUPERVISOR QUE PERMANECERA TODO EL TIEMPO QUE DURE LA PRUEBA.

2.2.5.2. EQUIPO Y MATERIAL

2.2.5.2.1. PRUEBAS DE LA PLANTA.

SE DEBERA DAR PRIORIDAD A LAS ORDENES DE TRABAJO SOLICITADOS POR DESARROLLO DE ME-TÓDOS, EN SUS LABORATORIOS DENTRO DE LA PLANTA.

2.2.5.2.2. LA CIA. ICI DEBERA ENTREGAR LAS AMPLIA-CIONES DE LOS LABORATORIOS EL 22 DE JU-NIO.

2.2.5.2.3. ESTUDIOS DEL CAMPO

- 1 MICROSCOPIO ESTEREOSCOPICO CON LUPA
MATERIAL RUTINARIO DE LABORATORIO Y
CAMPO.

PARTICIPANTES DE LA REUNION :

M.V.Z. JAMES E. NOVY
M.V.Z. SERGIO MARTINEZ GUZMAN
QUIM. RAQUEL COURTOIS
BIOL. RENE GARCIA RODRIGUEZ
SR. WILLIAM SWODLOW
DR. H.C. HOFMANN
M.V.Z. MOISES VARGAS TERAN

TELEPHONE LOG

DATE: 5-6-82 TIME: 3:00 p.m.

CALL FROM: (Name and Place) Dr. Anderson, Mexico City

CALL TO: Betty Liebe

PURPOSE OR REMARKS: 9 cases of screwworms: 29 37 - 101 26 Santa Rosa Ranch

Ranch Owner: Manuel Diego - south of Del Rio. One collected 4/20 from ingrown

horn; one 4/25 from shearing wound; 7 others not sampled but reported from same

ranch. Plan of attack: Ray Carr and Nieves get 40 traps (minimum) and stuff

to bait and run them and get on the road to Del Rio Friday 5-7-82. Lizandro

is coming up from Guadalajara and he and Ray will run traps and Nieves will

do door-to-door rancher contacts in area on this side of river. Mateo is to

remain here and identify samples. Lloyd Wendel as back-up.

Tomorrow Ramos will take truckload of SWASS to Del Rio; Tony is to get dis-

persing machine from Tampico (by pick-up) and fly it to Del Rio in the Cessna 180

FOLLOW UP INFORMATION: to be installed in a plane, and he should be able to start

dispersing SWASS on Saturday. First fly dispersal will be made tomorrow (Friday)

from Durango.

Lizandro should be in Del Rio by Sunday.

DATE: 5-6-82

SIGNATURE:

Betty Liebe

ADM-8 (5-18-65)

Glen Bolt



RECEIVED MAY 20 1982
COMISION MEXICO-AMERICANA PARA LA ERRADICACION DEL GUSANO BARRANADOR

LA ENERGIA ATOMICA AL SERVICIO DEL GANADERO

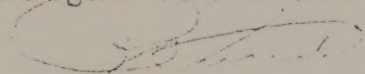
10 May 1982

NPV/125

SUBJECT: ARS Facility, Mission, TX

TO: E.L. Kendrick, RA

The Agricultural Research Service has continually provided new technology which has enhanced the effort to eradicate screwworms from the United States and Mexico. This support is vital in order to answer many questions that continue to grow out of new environments, and other factors which the program encounters as it progresses further south. We are pleased to see a strong force of Agricultural Research Scientists at work, and being planned for the facility at Tuxtla Gutiérrez, Chiapas, Mexico. Unfortunately there have been some serious labor difficulties at Tuxtla. Also, Tuxtla is subject to the effects of earthquakes, possibly floods, and more recently volcanic activity. Any of these problems could result in the need to evacuate the Tuxtla facility, possibly on very short notice. Should this become necessary, it will be extremely desirable for the preservation of the screwworm program to have an alternative site available to transfer screwworm cultures from the screwworm rearing facility, as well as the Agricultural Research Laboratory. USDA, APHIS is maintaining the rearing facility at Moore Air Base, Mission, Texas in a ready condition to receive insects should a transfer become necessary. We would like to recommend that the Agricultural Research Service do likewise with its facility at Moore Air Base, even if all scientists are transferred away from this facility. We see the possibility of losing time on valuable research projects and new strains being developed for the mass rearing facility if such an alternative site is not maintained. We wish you would give your sincerest thought and consideration to this matter.


Dr. Nazario Pineda V.
Director


Dr. Robert E. Reichard
Acting Co-Director

cc: R.A. Bram
O.H. Graham



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Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

May 17, 1982

FOREIGN TRAVEL REPORT

1. Traveler. R. L. Mangan, Research Entomologist, TAES, Screwworm Research, Mission, Texas, NRP 20480.
2. Countries Visited. Tuxtla Gutierrez and Tapachula, Chiapas, Mexico.
3. Purpose of Trip. Communicate with ARS and Commision scientists concerning objectives and design of experiments, set up equipment, purchase supplies for establishing pure lines for behavior and genetics work, make field collections, visit study areas, and establish multiple isofemale lines from field populations.
4. Summary. Met with Drs. Peterson and Spencer, USDA, ARS and Drs. Lowe and Novy, APHIS for discussion of facilities, technical help and problems.

Established 15 isofemale lines from plant strain V-81. Set up and had repairs made on 4 additional racks of vats.

Met with Mexican biologists in Tuxtla, left written instructions on line maintenance and experimental design for work this summer.

Visited strain evaluation site in Tapachula area. Visited localities and returned to Tuxtla with 20 egg masses for pure line establishment. Arranged to have 10 more masses with collection data, sent to Tuxtla for further line establishment.

R. L. MANGAN
Research Entomologist



United States
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Southern Region
Oklahoma-Texas Area

Ed. Shapiro
Screwworm Research
P. O. Box 986
Mission, Texas 78572

May 20, 1982

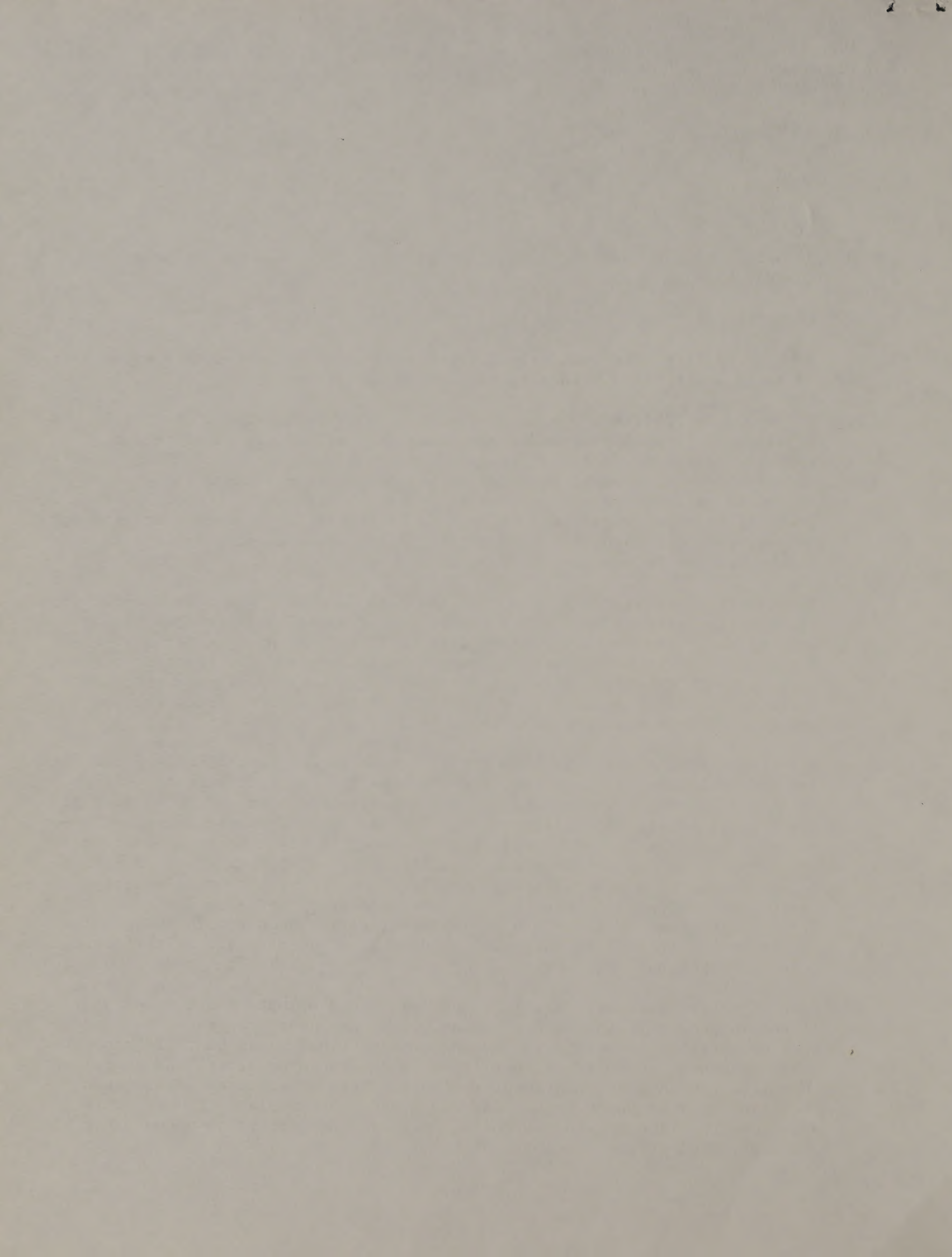
FOREIGN TRAVEL REPORT

1. Traveler. R. J. Brenner, Research Entomologist, Screwworm Research (TAES), Mission, Texas.
2. Countries Visited. Mexico, April 19 thru May 11, 1982.
3. Purpose of Trip. To initiate an experiment designed to test the effectiveness of small scale field trials in evaluating new strains.
4. Summary. In 1981, Mr. Don Hopkins, Supervisory Technician in Methods Development (APHIS) proposed a procedure that ultimately could replace the expensive large scale field trials currently in use. ARS and APHIS jointly agreed that the proposal merited a field evaluation. Thus, I requested that I be assigned to the project as research scientist. I modified the proposal so that, regardless of success or failure in producing sterile egg masses, we could gain some information on the movement of sterile screwworms in the tropics from ground release stations.

The Pacific Coastal Plain from Pijijiapan to Tapachula was selected for a primary test site (a 30 X 30 km region with Acapetahua as the geographic center) and a preliminary release site (a 17 X 17 km area centered 15 km S of Tapachula). The latter was deemed necessary in order to standardize techniques in releasing flies, and to determine whether sterile screwworms could disperse "uniformly" throughout the test area from ground release stations distributed on a 10 X 10 km grid.

Objectives during April 19 thru May 11 included, (a) establishing 7 corrals for sentinel sheep (3 near the center of the primary test site and 1 each located 5 km and 30 km west of the primary site and 5 km and 30 km east of the primary site); (b) collecting egg masses twice daily from sentinel sheep (wounded and infested with V-81 strain larvae) in order to gain pre-release data on rate of deposition and % sterility; (c) establishing reliable techniques for marking and releasing sterile flies from ground stations; (d) capturing these marked flies in wind oriented traps (WOT), baited with the ZP-31 formulation of swormlure and strategically placed within the preliminary release site. From this, we can determine the efficacy of the ground release techniques.

Each objective was met; (a), (c), and (d) were completed and the activity listed in objective (b) is continuing. Ranchers near Acapetahua have been most cooperative in permitting us to house sentinel sheep on their property. The techniques developed to mark flies (with multiple colors) and to release them from ground stations proved reliable. Mr. Hopkins also developed a technique to ship pupae in chilled containers via airplane or bus. This alone has resulted in reduced costs, increased uniformity of procedures, and increased efficiency of technicians.



As of this date (May 20), the first release of marked sterile flies in the primary study site has occurred. WOT's have been placed in various locations between release sites and around sheep pens. This project will continue for 3 months.

Regardless of the outcome, this test will result in our having a "standard" research site in which, the dispersal and distribution of sterile and native flies can be studied rigorously. Detailed maps of release sites and WOT locations have been prepared and natives have assured us that we are welcome to return to the area at any time.



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Dr. Shapiro
Screwworm Research
P. O. Box 986
Mission, Texas 78572

May 20, 1982

FOREIGN TRAVEL REPORT

1. Traveler. R. J. Brenner, Research Entomologist, Screwworm Research (TAES), Mission, Texas.
2. Countries Visited. Mexico, April 19 thru May 11, 1982.
3. Purpose of Trip. To initiate an experiment designed to test the effectiveness of small scale field trials in evaluating new strains.
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Dr. Graham
Screwworm Research
P. O. Box 986
Mission, TX 78572

May 24, 1982

FOREIGN TRAVEL REPORT

1. Traveler. D. O. McInnis, Research Geneticist, Screwworm Research, ARS, Mission, Texas, NRP 20480. I was accompanied on this road trip of some 4,500 miles by ARS technician, Joe Garcia.
2. Countries Visited. Mexico.
3. Purpose of Trip. The primary purpose of the trip was to collect screwworm material from the west coast of Mexico and transport these single egg mass strains to Tuxtla Gutierrez. This screwworm material is earmarked to form a new mass production strain.
4. Summary. We met Mr. Jim Bruce at the sterile fly distribution center in Guadalajara and were shown the trailer to be used to rear screwworms. Together we formulated plans to travel first to Cihuatlan, Jalisco where we would meet Mr. Bruce's field technicians stationed there and prepare to move as a unit to the recommended area of Coalcoman, Michoacan. While in Cihuatlan we collected several egg mass groups from sheep pens located just across the border in Colima. Egg mass sterility was 30% (3/10) in two days under a regular grid of sterile flies.

The 120 mi. trip to Coalcoman took 12 hrs. partly over unpaved mountain roads. We met the local screwworm inspector who enthusiastically assisted us in reaching our goal. In 4 days we collected 50 separated groups, including crawl-off larvae from a pig and a horse. Eighteen egg masses were sterile for a sterility level of 36%. Sentinel sheep pens averaged a relatively high 3 egg masses/pen/da. Due to very hot & dry conditions which contributed to the death of 2 of our 8 sheep, and because security conditions for the trailer were much better in Cihuatlan, we returned to the latter city by taking a longer, though paved road.

During our second stay in Cihuatlan (5 days) we collected 33 egg masses of which 4 (12%) were sterile. According to Mr. Bruce, sterile flies were not dispersed over the Cihuatlan area for about 10 days during the period we were there. Insect rearing proceeded smoothly with our makeshift incubators and few groups were lost. On the date of departure for Tuxtla, May 11, we had 46 viable egg mass groups, most of which were in the pupal stage.

We took the coastal road through the states of Colima, Michoacan, Guerrero, Oaxaca, and Chiapas. This highway was complete except for several stretches between Manzanillo and Acapulco. We arrived in Tuxtla after 2 long days on the road. We set up the egg mass groups in the ARS facility with the assistance of Biologist Maria Elena Vasquez. Development of the new Micholima (Michoacan and Colima) strain will be supervised on site by Dr. Richard Peterson. Plans are to combine from 15 to 30 groups from both sampled areas

in a fly-choice scheme.

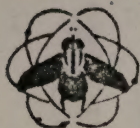
I took an inventory of laboratory space and supplies at the ARS facility and prepared a list of needed materials. We had brought some of these supplies from Mission, TX., including a stereoscope and several liquid nitrogen tanks.

While in Tuxtla I visited both the sterile fly production facility and the Methods Development section. On the production floor, I noticed that Groups 9 and 10 vats contained many dead 3rd instar larvae. These may have drowned in the water which was added to these groups to induce crawl-off. Larval feeding stopped at Group 8. The new Arriaga strain was rearing very well on meat medium in the Methods section (75-80 mg. avg. larval size), but was growing poorly on a hydroponic diet (ca. 63 mg. average). Both egg and blood ingredients were described as defective by Methods personnel and Drs. Novy and Martinez. Replacement of these key ingredients near to the time of my departure from Tuxtla were having the desired effect of increasing larval size of the Arriaga strain on hydroponic medium.

I discussed with Drs. Novy, Martinez, and Lowe the possibility of selecting for increased pupal size in the plant V-81 strain. A plan to involve Methods Development personnel was discussed. Some preliminary data had already been gathered from earlier testing in Methods on the subject of pupal size selection and these data were reviewed. More needed data will be forthcoming, especially regarding the time involved in, and the resulting sex ratio of, sifting to remove the smallest 10-20% of the total colony pupae.

On May 16, we departed Tuxtla for Mission. We arrived home on May 17 after one stop-over in Tuxpan. We brought back one liquid nitrogen tank containing larval and adult samples for analysis.

D.O. McInnis
D. O. McInnis
Research Geneticist



RECEIVED JUN 1 1982

COMISION MEXICO-AMERICANA PARA LA ERRADICACION DEL GUSANO BARRENADOR

LA ENERGIA ATOMICA AL SERVICIO DEL GANADERO

COMTA. 24363

KM. 2 CARRETERA A LA ANGOSTURA
CHIAPA DE CORZO, CHIS.

APDO. POSTAL 544

May 24, 1982

TO: DR. RONALD E. LOWE
SUB-DIRECTOR OF PRODUCTION

SUBJECT: WEEKLY ACTIVITY REPORT
MAY 11 - 21, 1982

Field work (Strain evaluation and behavior in the field)

The first shipment of flies for release in the test-area west of Tapachula was received last Tuesday. Pupae were placed in the field on Tuesday, Wednesday, and Thursday. Delays because a pick-up was out of service, muddy roads, and difficulties in locating release sites for the first time prevented placement of all the pupae on Tuesday and Wednesday.

Twice daily we are collecting egg masses from seven corrals of sheep separated by distances of up to 90 Km., placing pupae at 9 release points within a 30 x 30 Km. area twice weekly, and attempting to establish and service traps near all the corrals and at locations within the area of 30 x 30 Km.; there is a total of 36 traps.

Because there are only three people working and only two pick-ups in service for the project in the area, the trapping has been curtailed until more resources are available.

We are collecting between 4 and 14 egg masses per day. Fertility was 100% for this reporting period.

Sincerely

Ronald E. Lowe
for D. R. HOPKINS

c.c. Dr. O. H. Graham - ARS, Mission, Texas
c.c. Dr. R. J. Brenner - ARS, Mission, Texas

*svrg



United States
Department of
Agriculture

Agricultural
Research
Service

National
Program
Staff

Beltsville, Maryland
20705

May 25, 1982

SUBJECT: Long, Long-Range Plan for Research and Diagnosis on Foreign
Animal Diseases and Arthropods

TO: H. G. Purchase
Acting Associate Regional Administrator, NER

As requested in your memorandum on this subject of April 16, enclosed please find a proposal entitled, "Long-Range Plan for Foreign Animal Disease and Ectoparasite Diagnosis and Research." This proposal was jointly prepared by Dr. H. A. McDaniel (APHIS-VS), Dr. L. Barber (NTA for Foreign and Vector-borne Diseases), and me with input from the addressees of your memorandum and other sources.

Please note that pages 7 and 8 list what we judge to be the options available for implementation and the pro's and con's for each option. Following our scheduled meeting with Dr. Kinney on June 2 and the decision on how next to proceed, we recommend that either the National Research Program Leader for Foreign Animal Diseases or the National Technical Advisor for Foreign and Vector-borne Diseases assume responsibility for implementing the proposal.

RALPH A. BRAM
National Research Program Leader
Insects Affecting Man & Animals

Enclosure

cc: w/enclosure

T. B. Kinney	J. J. Callis
H C Cox	C. W. Beard
P. J. Fitzgerald	R. O. Drummond
E. L. Kendrick	T. E. Walton
G. E. Vanden Berg	☒ O. H. Graham
T. J. Army	C. J. Whitten
R. J. Gerrits	K. L. Kuttler
T. L. Barber	J. Espenschade
N. I. James	J. Elston
J. R. Johnston	K. R. Hook
C. H. Schmidt	W. Thrush
J. M. Vetterling	H. A. McDaniel
D. E. Zimmer	

PROPOSAL
Long-Range Plan for Foreign Animal Disease and
Ectoparasite Diagnosis and Research

Issue

The U.S. Department of Agriculture (USDA) has the responsibility of preventing the introduction of Foreign Animal Diseases and Ectoparasites (FAD&E) into the United States. Should one of these agents gain entry into our country, the USDA is charged with the mission of early detection, control, and eradication. To accomplish these responsibilities and missions, long-range policy decisions must be reviewed and modified periodically to reflect changing circumstances and plans for future actions. Policy decisions on FAD&E must, therefore, be based on long-range plans for diagnosis and research, including foreign animal disease transmission by endemic and exotic arthropod vectors. It is also necessary to identify where FAD&E diagnosis and research should be conducted, what facilities are needed, and the magnitude of resources which should be devoted to these efforts.

Livestock production in much of the world is intimately tied to the United States - cattle and other domestic livestock production often depend on grain and feed supplements exported from the United States. In order to continually increase U.S. grain exports by making livestock feeding a sound investment worldwide, it is critical that the technology to improve animal health on herd, regional, and national levels be provided.

Background and Justification

1. As the Animal and Plant Health Inspection Service (APHIS) eradication programs progress, more animal diseases and ectoparasites will become exotic to the United States. Major recent examples of such successes include Venezuelan equine encephalomyelites, screwworms, cattle fever ticks, hog cholera, and velogenic viscerotropic Newcastle disease. Furthermore, there have, and will continue to be, major changes in the worldwide incidence and distribution of FAD&E and of the potential threat of their introduction into the United States. The Agricultural Research Service (ARS) has a major responsibility to provide FAD&E diagnosis and research support to the regulatory and action programs of APHIS. It is, therefore, necessary to identify and evaluate the long-range FAD&E needs of APHIS and to determine how these may best be addressed through diagnosis and research by ARS.

It is in the best interests of the United States to provide worldwide support for all programs that reduce or eliminate animal disease threats. The technology for large-scale disease surveillance programs, which can be implemented in the event of an FAD&E outbreak, is a high priority developmental need. Such large-scale surveillance programs can be field tested in countries where target FAD&E are endemic and, thus, benefit the host country as well as the United States.

2. The technology and operational procedures to prevent the introduction of FAD&E, for the diagnosis of FAD&E, and for the eradication of FAD&E are in a continual state of evolution. For example, recombinant DNA technology will

improve diagnostic and vaccine production practices; genetic engineering holds promise for revolutionizing arthropod control and eradication; modern techniques and instrumentation have and will continue to facilitate rapid diagnosis of large numbers of specimens; and techniques to diagnose and eradicate "new" FAD&E's or agents which have increased in their incidence and threat to the United States must be developed. Long-range plans and policies must be developed to meet these and other changing needs.

3. When present facilities for FAD&E diagnosis and research were first constructed, they incorporated the most modern concepts available in biological containment. When the Plum Island Animal Disease Center was established, it was concluded that, due to the inherent dangers FAD&E presented to the livestock industry, maximum biological containment could only be provided by locating the facility on an island surrounded by ocean. Recent advances in biological containment may have changed this concept and a reevaluation must be made of such factors as: (a) legal implications; (b) cost of operating an isolated island facility; (c) proximity of an island facility to academic, cultural, and intellectual stimuli for scientists; (d) changes in availability of low-cost energy and new energy saving technology; and (e) modernizing biological containment features of current facilities.

4. Animal germplasm, so important to improving animal agriculture, is currently imported through several animal import centers (for example, Newburg, New York; Key West, Florida; Miami, Florida; etc.). Zoological specimens are also imported through this mechanism. Future technology will undoubtedly accentuate the importation of semen, ova, and embryos rather than whole animals. The need for FAD&E diagnosis and research related to this developing technology must be addressed.

5. In the long-term future, there may be significant changes in agricultural practices which will influence the concern for introducing FAD&E. It will be necessary to assess the probability of such changes and their impact on FAD&E diagnosis and research.

6. APHIS has primary responsibility for the detection, surveillance, control, and eradication of economically important FAD&E's. Since ARS is responsible for research and diagnosis and APHIS is responsible for much of the implementation, it is critical that detailed, long-range plans be jointly developed in order that no important aspect is overlooked. Field testing of surveillance technology in advance of outbreaks in the United States is an outstanding example where long-range planning and coordination is mandatory.

Purpose/Objective

The overall goal of this assignment is to develop a long-range plan, in three 10-year increments, for FAD&E diagnosis and research within the context of the USDA mission. The plan will then be used by responsible USDA officials as a basis for long-range policy on FAD&E diagnosis and research. The objectives are to:

1. Assess the current state of the USDA effort on FAD&E diagnosis and research, including liaison between agencies, personnel, facilities, equipment, financial resources, and economy of operation.

2. Determine present technology in biological containment and the projected state-of-the-art in three 10-year increments.
3. Develop, by January 31, 1983, a plan for USDA research and diagnosis in three 10-year increments which consider all FAD&E's of livestock and poultry including: viral, bacterial, rickettsial, fungal, hemoprotozoan diseases; the role of endemic and exotic arthropod vectors in this transmission; and exotic ticks, mites, parasitic Diptera and other ectoparasites. This plan must address not only scientific aspects as defined in the ARS Strategic Plan, but also operational considerations such as existing and projected facilities and their locations, scientific and support personnel, equipment, budget, and necessary renovations.

Tasks

The following tasks must be completed in order to fulfill the three major objectives.

1. Assess current state of USDA effort.
 - a. Review relevant background documents provided by USDA including: (1) legislation; (2) previous program reviews and reports; (3) budget documents and personnel rosters; (4) USDA Policy on Research and Diagnostic Activities in the United States on Exotic Pathogens (12/3/81).
 - b. Site visits by the entire review team to following locations:
 - (1) Plum Island Animal Disease Center, Greenport, New York.
 - (2) National Animal Disease Center and Veterinary Services Diagnostic Laboratory, Ames, Iowa.
 - (3) Washington, D.C. and vicinity for interviews with: (a) Administrator, ARS; (b) Administrator, APHIS; (c) ARS National Program Staff; (d) APHIS Emergency Programs; and (e) APHIS National Program Planning Staffs.
 - c. Site visits by selected review team members to the following laboratories:
 - (1) Arthropod-borne Animal Disease Research Laboratory, Denver, Colorado.
 - (2) Metabolism and Radiation Research Laboratory, Fargo, North Dakota.
 - (3) Southeast Poultry Research Laboratory, Athens, Georgia.
 - (4) Hemoprotozoan Diseases Research Laboratory, Pullman, Washington.
 - (5) U.S. Livestock Insects Laboratory, Kerrville, Texas.

- d. Optional site visits by selected review team members to the following locations.

- (1) Screwworm Research Unit, Tuxtla Gutierrez, Mexico.
- (2) Harry S. Truman Animal Import Center, Key West, Florida.
- (3) Newburg Animal Import Center, Newburg, New York.
- (4) University of Wisconsin, Madison, Wisconsin.
- (5) Oklahoma State University, Stillwater, Oklahoma.
- (6) Oregon State University, Corvallis, Oregon.

2. Determine present technology in biological containment.

- a. Selected review team members review all current, published information on biological containment.
- b. Site visits by selected review team members to the following locations:
 - (1) U.S. Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Maryland.
 - (2) Flow Laboratories, Vienna, Virginia.
 - (3) High Security Animal Disease Research Laboratory, Ottawa, Canada.
- c. Optional site visits by selected review team members to the following laboratories:
 - (1) National Institutes of Health, Bethesda, Maryland
 - (2) Center for Disease Control, Atlanta, Georgia.
 - (3) Australian National Animal Health Laboratory, Geelong, Australia.

3. Develop a plan for FAD&E diagnosis and research.

- a. Individual review team members prepare draft sections of plan at home duty station.
- b. Entire review team meets at a neutral location to develop draft report.
- c. Prepare final report by January 31, 1983.

Deliverables

1. The report will conclude with justified recommendations on future facilities and their locations, personnel staffing requirements, equipment requirements, and budget requirements. The final product of this assignment will be a report which assesses the current state of the USDA effort on FAD&E diagnosis and research, determines the present and future technology in biological containment, and provides a plan for FAD&E research and diagnosis in three 10-year increments.
2. The report is expected to be received in final form by January 15, 1983, with a 2-week grace period.
3. All copies of the report will be received in bulk via United Parcel Service.
4. Twenty-five copies of the report will be delivered.

Milestones in Performance

The following milestones will be met during the course of this assignment:

1. A five-page summary of background documents provided by USDA 3 weeks after project begins.
2. A progress report on the current state of FAD&E diagnosis and research 2 months after project begins.
3. A draft final report 2 weeks before due date of final report.

Progress Meetings/Design Walkthrough

1. The design walkthrough will be held within 1 week after formal initiation of the project.
2. A progress meeting will be held with the submission of the progress report on the current state of FAD&E diagnosis and research.
3. The final progress meeting will be held at the time of submission of the draft final report.

Key Personnel

ARS and APHIS will have authority to approve the proposed list of review team members who should have the following technical expertise:

1. Biological containment.
2. Arthropod-borne disease transmission.
3. Foreign animal disease research.

4. Foreign animal disease eradication.
5. Ticks, mites, screwworms, and other parasitic diptera.
6. Foreign animal disease diagnosis.
7. Livestock producers.

No personnel substitutions will be permitted unless such substitutions are necessitated by an individual's sudden illness, death, or termination of employment. All proposed substitutions must be submitted in writing at least 15 days in advance of proposed substitution.

Budget Estimate (for planning purposes only)

1. Personnel salaries	\$100,000
2. Travel (see estimate below)	120,500
3. Secretarial and other office expenses	<u>10,000</u>
TOTAL ACTUAL EXPENSES	230,500
4. Overhead and profit (35% of actual expenses)	<u>80,675</u>
GRAND TOTAL	\$311,175

Travel Estimates (air fare and per diem)

From*	To	Air Fare	People	Per Diem Days	Total Air Fare	Total Per Diem	Total
St. Louis	- Greenport, NY	424	7	6	2,968	2,100	5,068
St. Louis	- Ames, IA	102	7	6	714	2,100	2,814
St. Louis	- Denver, CO	264	2	3	528	402	930
St. Louis	- Fargo, ND	360	2	3	720	300	1,020
St. Louis	- Athens, GA	310	2	3	620	300	920
St. Louis	- Pullman, WA	819	2	3	1,638	300	1,938
St. Louis	- Kerrville, TX	316	2	4	632	400	1,032
St. Louis	- Tuxtla Gutierrez, Mex	536	2	5	1,072	580	1,652
St. Louis	- Key West, FL	382	2	3	764	300	1,064
St. Louis	- Newberg, NY	518	2	3	1,036	300	1,336
St. Louis	- Washington, DC	300	8	6	2,400	3,600	6,000
St. Louis	- Atlanta, GA	230	2	3	460	336	796
St. Louis	- Sydney, Australia	2,648	1	14	2,648	1,330	3,978
St. Louis	- Ottawa, Canada	661	1	6	661	450	1,111
St. Louis	- Chicago, IL	198	7	7	1,386	3,626	<u>5,012</u>
GRAND TOTAL						\$120,471	

* St. Louis is used as the starting point for each round trip for purposes of estimation only.

Options for Implementation

I. Contracting for Consulting Services

A. Competitive Contract

1. Pro's

- a. Perceived as an unbiased analysis.
- b. Does not require agency personnel.
- c. Obtain opinions of noted experts.
- d. Avoid problems associated with travel ceiling.
- e. Opportunity to judge different proposals.
- f.

2. Con's

- a. Requires 125 days to award contract from date of decision.
- b. Permits only 4 months to carry out assignment.
- c. May not produce a useable report.
- d.
- e.
- f.

B. Non-Competitive Contract

1. Pro's

- a. Perceived as an unbiased analysis.
- b. Does not require agency personnel.
- c. Obtain opinions of noted experts.
- d. Avoid problems associated with travel ceiling.
- e. Known contractor will produce a known product.
- f.

2. Con's

- a. Requires 125 days to award contract from date of decision.
- b. Permits only 4 months to carry out assignment.
- c. No opportunity to judge different proposals.
- d.
- e.
- f.

II. S&E Coordinated Study

A. Total inhouse study

1. Pro's

- a. Begin immediately.
- b. Utilize existing experts in ARS and APHIS.
- c. Control of final product in timely fashion.
- d.
- e.
- f.

2. Con's

- a. May be perceived as self-serving.
- b. Consume precious travel ceiling.
- c. Cause of conflict between varying viewpoints within ARS and APHIS.
- d. Take up time of scientists and staff.
- e.
- f.

B. S&E Coordinator with Expert Consultants

1. Pro's

- a. Control of final product.
- b. Perceived as an unbiased analysis.
- c. Does not require extensive use of agency personnel.
- d. Obtain opinions of noted experts.
- e.
- f.

2. Con's

- a. Consume precious travel ceiling.
- b. Requires Departmental approval for each expert consultant.
- c. Requires at least 60 days to begin after submission of documentation.
- d.
- e.
- f.



United States
Department of
Agriculture

Agricultural
Research
Service

National
Program
Staff

Beltsville, Maryland
20705

May 26, 1982

SUBJECT: ARS Facility, Mission, Texas

TO: Nazario Pineda V.
Robert E. Reichard

Thank you for your memorandum of May 10 to E. L. Kendrick recommending that ARS maintain the research facility at Mission, Texas, in a ready condition. We have discussed your proposal with Dr. R. A. Hoffman, Associate Director, Oklahoma-Texas Area, and Dr. O. H. Graham, Mission/Tuxtla Gutierrez Location Leader, and fully agree that, should it become necessary to reinitiate screwworm production in the United States, the ability of ARS to reopen the research facility on short notice would become extremely important. In addition, we feel that the status of the mothballed facility should be reevaluated every 6 months, perhaps during a Screwworm Technical Meeting.

We will, therefore, develop plans to maintain the ARS Mission Screwworm Research Laboratory in a ready condition after it has closed and trust that APHIS personnel at the Mission location will consent to provide security for the facility in the absence of ARS screwworm project personnel.

RALPH A. BRAM
National Research Program Leader
Insects Affecting Man & Animals

cc: w/cpy incoming

T. B. Kinney

T. J. Army

E. L. Kendrick

J. R. Johnston

✓ O. H. Graham



COMISION MEXICO-AMERICANA PARA LA ERRADICACION DEL GUSANO BARRENADOR

LA ENERGIA ATOMICA AL SERVICIO DEL GANADERO

10 May 1982

NPV/125

SUBJECT: ARS Facility, Mission, TX

TO: E.L. Kendrick, RA

The Agricultural Research Service has continually provided new technology which has enhanced the effort to eradicate screwworms from the United States and Mexico. This support is vital in order to answer many questions that continue to grow out of new environments, and other factors which the program encounters as it progresses further south. We are pleased to see a strong force of Agricultural Research Scientists at work, and being planned for the facility at Tuxtla Gutiérrez, Chiapas, Mexico. Unfortunately there have been some serious labor difficulties at Tuxtla. Also, Tuxtla is subject to the effects of earthquakes, possibly floods, and more recently volcanic activity. Any of these problems could result in the need to evacuate the Tuxtla facility, possibly on very short notice. Should this become necessary, it will be extremely desirable for the preservation of the screwworm program to have an alternative site available to transfer screwworm cultures from the screwworm rearing facility, as well as the Agricultural Research Laboratory. USDA, APHIS is maintaining the rearing facility at Moore Air Base, Mission, Texas in a ready condition to receive insects should a transfer become necessary. We would like to recommend that the Agricultural Research Service do likewise with its facility at Moore Air Base, even if all scientists are transferred away from this facility. We see the possibility of losing time on valuable research projects and new strains being developed for the mass rearing facility if such an alternative site is not maintained. We wish you would give your sincerest thought and consideration to this matter.


Dr. Nazario Pineda V.
Director


Dr. Robert E. Reichard
Acting Co-Director

cc: R.A. Bram
O.H. Graham

5/19
pk
Pub
5/17/82

This item has been digitized as a selection from the Screwworm Eradication Collection.

Digital Item Number: 00302

Format: Memorandum copy

Additional Format:

Author: Ralph A. Bram

Additional Authors:

Recipient: O. H. Graham

Date: 27 May 1982

Recommendations of the Technical Panel for the Study of Reproductive
Isolation in Screwworm Populations

Note:

Screwworm Eradication Records

Screwworm Eradication Collection

Special Collections, National Agricultural Library



United States
Department of
Agriculture

Agricultural
Research
Service

National
Program
Staff

Beltsville, Maryland
20705

May 27, 1982

SUBJECT: Recommendations of the Technical Panel for the Study of
Reproductive Isolation in Screwworm Populations

TO: ✓ O. H. Graham, LL, Mission, TX
C. J. Whitten, PL, Fargo, ND
L. E. LaChance, LD, Fargo, ND
R. A. Hoffman, AAD, College Station, TX
C. H. Schmidt, AD, Fargo, ND

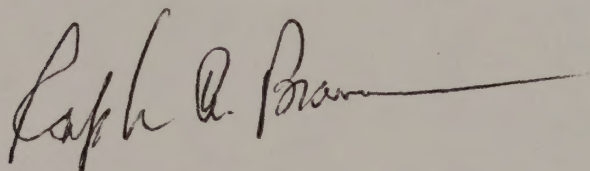
Thank you for participating in the conference call of May 25 to review and discuss subject recommendations. As a result of these deliberations, I would suggest that the direction of future screwworm research at Fargo and Tuxtla Gutierrez be guided by the following table of activities.

Technical Panel Recommendation	Primary Responsibility	Secondary Responsibility
1. Establish center for isofemale lines.	Fargo will plan to maintain 12-24 lines to support ongoing research activities; will also serve as a repository for lines carrying unusual genetic markers; capacity will never exceed 100 lines at any one time.	Tuxtla will establish isofemale lines to support ongoing research; will not maintain any lines for long periods; capacity will never exceed 50 lines at any one time.
2. Continue program to improve factory strains.	Tuxtla will develop more strains for use by APHIS.	Fargo will provide specialized support whenever necessary.
3. Search for new methods to define populations.	Tuxtla will pursue research on somatic karyotyping, allozymes, mating behavior, and other techniques.	Fargo will study meiotic chromosomes and polytene chromosomes.
4. Intensify taxonomic studies of screwworms and related species of Calliphoridae.	The Systematic Entomology Laboratory is ideally suited to conduct taxonomic investigations; Drs. Ray Gagne and D. Wilder will address specific problems related to screwworms on an ad hoc basis.	Fargo and Tuxtla will provide specimens and other support as needed for systematic investigations.

Technical Panel Recommendation	Primary Responsibility	Secondary Responsibility
5. Mount major effort on basic screwworm genetics.	<u>Fargo</u> will intensify studies on basic genetics; Dr. LaChance will become involved in screwworm genetics research; budget increases will be sought to support 3 additional SY's.	<u>Tuxtla</u> will conduct that basic genetics research which is necessary to support ongoing research.
6. Continue studies of mating behavior and sexual isolation.	<u>Tuxtla</u> will concentrate on mating behavior research utilizing isofemale lines, field investigations, and other studies.	<u>Fargo</u> will conduct mating tests with isofemale lines and provide support for <u>Tuxtla</u> investigations.
7. Develop "male only" strain.	<u>Fargo</u> will continue research on the development of a genetic sexing system.	<u>Tuxtla</u> will initiate field studies when results of <u>Fargo</u> research indicate that a breakthrough is imminent.
8. Generate data on field biology, natural history, and population ecology.	<u>Tuxtla</u> will continue research on biology, ecology, and natural history as related to screwworm eradication.	<u>Fargo</u> will provide laboratory support, if necessary.
9. Propagate new factory strains by fly-choice methods.	<u>Tuxtla</u> will continue this technology when implementing recommendation 2 above.	<u>Fargo</u> will provide specialized support whenever necessary.
10. Maintain flexibility in factory production at Tuxtla.	ARS scientists will jointly develop recommendations to APHIS concerning factory production.	
11. Search for natural predators and parasites in South America.	<u>Tuxtla</u> will consider this recommendation as a lower priority effort, but will explore opportunities whenever conducting ecological investigations in South America.	

Technical Panel Recommendation	Primary Responsibility	Secondary Responsibility
12. Attract grants from traditional funding agencies to support basic biology.	<u>Fargo</u> will provide facilities and assistance to scientists working on projects that fall within the ARS ongoing screwworm research objectives and priorities.	<u>Tuxtla</u> will concentrate on training and working with scientists from Mexico, Central America, and South America; joint projects must fall within ARS ongoing screwworm research objectives and priorities.
13. Initiate education programs for public and project personnel.	<u>APHIS</u> and the Screwworm Commission have an effective information division which is responsible for implementation of this recommendation.	<u>ARS</u> will educate research personnel through orientation and, whenever possible, by technical experts on an <u>ad hoc</u> basis.

The above table of activities does not address many research projects (for example, swormlure and SWASS enhancement) which were not identified by the Technical Panel. Such activities will be continued at their same locations.



RALPH A. BRAM
National Research Program Leader
Insects Affecting Man & Animals

cc:

T. J. Army
E. L. Kendrick
P. J. Fitzgerald
J. R. Johnston
K. L. Lebsack
L. V. Knutson
J. J. Drea



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

May 28, 1982

Dr. J. R. Johnston, AD
USDA, ARS, SR, OTA
P. O. Box EC
College Station, TX 77841

Dear Rex:

All of us in screwworm research were delighted to read that your outstanding service to ARS was recently recognized with the Department's Superior Service Award. The skill and dedication which has been so apparent since you were named Area Director were clearly devoted to the USDA research mission from the day you entered the organization. Congratulations, Rex, on this well deserved recognition.

Sincerely,

O. H. GRAHAM
Location/Project Leader



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

May 28, 1982

Dr. L. E. LaChance
National Technical Advisor
for Radiation
USDA, ARS, NCR, MRRL
Fargo, ND 58105

Dear Leo:

Now that we have seen the final report of the Technical Panel which was chosen by ARS to study screwworm reproductive isolation, we are more than ever grateful to you for the success of this study. Because of your skill and experience you were able to select outstanding geneticists for the study and then assist and guide them toward a successful conclusion. The report and its conclusions will be very helpful to us and we will implement as many of the recommendations as our resources permit.

Thanks again, Leo for having been willing to undertake this complex and difficult study and for having done it so well.

Sincerely,

O. H. GRAHAM
Location/Project Leader

cc: R. A Hoffman, AAD, College Station
R. A. Bram, SS, Beltsville



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

May 28, 1982

SUBJECT: Request for Supplemental Funds

TO: J. R. Johnston, AD
USDA, ARS, SR, OTA
P. O. Box EC
College Station, TX 77841

As you are aware, APHIS has expressed a strong desire that our research facility at Mission be mothballed when the personnel move to Tuxtla Gutierrez, and be in a condition to reopen quickly if needed. Ralph Bram has stated that we should be able to resume research here within one week of the time that APHIS resumes screwworm fly production at this location. To meet this requirement we will have to leave certain equipment and supplies in place in this laboratory and APHIS, as the facility manager, will have to earmark the building for the exclusive use of ARS.

In order to have the equipment and supplies needed to fulfill our mission at both locations, we will have to purchase equipment and supplies during FY 1982. Since funds are not available at location, we would like to request supplemental funds in the amount of \$50,000 from the Administrator's Contingency Fund.

O. H. Graham
O. H. GRAHAM
Location/Project Leader

cc: R. A. Bram, SS, Beltsville

REQUEST FOR SUPPLEMENTAL FUNDS

1. Subject: Establishment of a standby laboratory for screwworm research at Mission, Texas.
2. Origin of Request: Southern Region
Oklahoma-Texas Area
USDA, ARS, Screwworm Research
O. H. Graham, Location/Project
Leader
3. Objectives of Research: To have a facility available for immediate use in case of emergency in which research in support of screwworm eradication from the United States could be conducted. If the APHIS sterile fly production facility at Mission is reactivated ARS would be responsible for research on (1) strains of screwworms best suited for sterile fly release in the U.S.; (2) survey techniques for use in determining the source and extent of the infestation; (3) behavior in the laboratory of recently colonized and laboratory adapted strains; (4) research on larval diets and rearing procedures; and (5) preparation and improvement of a pest management type of screwworm control program in which sterile fly releases would be supplemented by other control technologies.
4. Justification: If sterile fly production in the facility at Tuxtla Gutierrez should be lost, or if the eradication program should suffer a severe reversal, APHIS would respond by resuming production of sterile screwworm flies at Mission, Texas. Maintenance of a supporting research program by ARS is considered essential by both Administrators and the Directors of the Mexican-American Screwworm Eradication Commission (see attached copies of letters). To implement moth-balling of the Mission laboratory while transferring its active research program to Tuxtla Gutierrez, the research unit will have to duplicate several items of equipment, supplies, and accessories as it would not be possible to move equipment back to Mission quickly enough to meet program requirements.
5. Alternate Means of Funding: No Area funds are available to support this need.
6. Amount Requested: \$50,000
7. Amount Contributed by Region or Area: None from Area.
8. WRU Number: 201-7309-20480



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

May 27, 1982

Dr. M. E. (Cotton) Meadows
1804 Fairway Cr.
Mission, TX 78572

Dear Cotton:

The Technical Panel on Reproductive Isolation in Screwworms has completed its report and I am forwarding a copy for your information. We in ARS are very pleased that the three members of the panel were so conscientious and thorough in their study and feel that both the research and eradication programs will benefit from their recommendations. My personal interpretation of their conclusions is that they do not believe that the evidence offered by the University of Texas geneticists in their Science article was adequate to prove the existence of reproductive isolation in Mexican populations of the screwworm. Nevertheless, the possibility that the program will encounter native screwworms which will not mate with steriles cannot be ignored and we will follow through with research of the type recommended by the Panel.

The briefing on the eradication program as a whole which you presented was excellent. You really gave the Panel a superb introduction to the program's successes and problems and helped them to focus their study. We very much appreciate your willingness to use your personal time to help us address an important research problem.

Sincerely,

O. H. GRAHAM
Location/Project Leader

cc: R. A Hoffman, AAD, College Station
R. A. Bram, SS, Beltsville
L. E. LaChance, RL, Fargo
N. L. Meyer, ADA, Washington, D. C.

Enclosure

